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ABSTRACT

The study developed and implemented a questionnaire to examine misconceptions related to Acquired Immune Deficiency Syndrome (AIDS) among 57 college students enrolled in Psychology 101 courses at Essex Community College in Maryland. The questionnaire covered etiology and epidemiology of AIDS and the personal attitudes and experiences of the respondents. Two forms of the questionnaire were developed, each containing the same number of items, type of content, and level of difficulty. Subjects were exposed to a total of three administrations of the two questionnaires. Results indicated that more misconceptions were held about how one gets AIDS than about its impact on society. Subjects believed that infected patients should pay their own treatment costs. They also indicated that they would feel very uncomfortable around someone who had AIDS. Although there were no differences as a function of test form, time of administration had a significant effect on performance. An appendix contains copies of the questionnaires. Includes 41 references. (JDD)

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THE DEVELOPMENT OF A QUESTIONNAIRE TO SURVEY COLLEGE STUDENTS' MISCONCEPTIONS ABOUT THE SPREAD AND PREVENTION OF AIDS

Emergence of Higher Education in America

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ABSTRACT

The purpose of this study was to develop, then implement, a questionnaire to examine AIDS-related misconceptions among college students. The participants were 57 students enrolled in Psychology 101 courses at Essex Community College in Maryland. The data gathered for examination was pursued through two methods of investigation. The first part of this practicum was to develop the questionnaires. The second major part of the procedure was to conduct the survey. The results of this study indicated that more misconceptions were held about how one gets AIDS than about its impact on society. Suggestions for additional inquiries into students' misconceptions about the AIDS virus included revision of the questionnaire and its use as a test, retest measure with an intervening lecture. It was concluded that we are currently facing an epidemic of major proportions and that this disease will impact upon all of facets of higher education.

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Chapter 1

INTRODUCTION

The Problem for Investigation

The problem for investigation in this study was how much or how little college students know about the AIDS virus. This study was proposed because major gaps exist in our understanding of AIDS transmission. This lack of understanding exists even in the most enlightened areas with the most advanced programs.

In 1988, the Carnegie Council on Policy Studies in Higher Education suggested that barring a catastrophe, such as an epidemic, the number of people of college age can be predicted with reasonable accuracy. Based upon the current demographics of AIDS patients, this disease could have a major effect on the future of higher education.

The Purpose of Investigation

The purpose of this study was to develop a questionnaire to examine AIDS-related misconceptions among college students. It has been shown that efforts to educate college students about AIDS have not been effective (Mangan, 1988). Most students do not perceive themselves as vulnerable and are not protecting themselves against the disease. It has also been suggested that more creative and personal AIDS education strategies should be employed. This study was an attempt to pursue these suggestions.

This practicum was intended as a first step in designing a program to provide adequate and accurate information to college students. The

intent of this study was to design an instrument that could test students' knowledge about AIDS, and then be used to stimulate interactive discussions about the disease.

The Method of Investigation

In this study, the data gathered for examination was pursued through two methods of investigation. The first part of this practicum was to develop an AIDS-related questionnaire that could be used at Essex Community College in Maryland. The next part of the procedure was to conduct the survey.

The questions that this survey addressed were salient issues concerning the spread and prevention of the AIDS virus. These questions assessed the students' knowledge about the epidemiology of the disease, its victims and its consequences. The questionnaire also contained several questions about the respondents' personal beliefs. Theses types of questions were included to investigate the attitudes and experiences of the respondents.

Chapter 2

BACKGROUND AND SIGNIFICANCE

The impetus for this study was based upon work done for the Emergence of Higher Education in America Seminar. The content of this seminar emphasized that both historical and current factors influence the future of higher education. As such, this investigation was an attempt to provide information about the success of past and present AIDS-related programs. It was also hoped that the study would be useful in designing new programs to correct misconceptions held about the spread and prevention of this disease.

Coughlin (1989) has suggested that all disciplines should begin to think seriously about the social implications of this epidemic. To date, however, most investigations have been limited to biomedical research. Understanding the social consequences of the effect of AIDS is directly related to the etiologies presented in the Emergence Seminar. The consequences of this disease impacts upon every facet of every institution in our educational system.

The Epidemic

In 1989, the Federal Government was expected to spend 260 million dollars on AIDS education (FNP Health Report, 1988). It was predicted that a minimum average rate of increase for AIDS education would be thirty percent. By 1991, the state of California will spend 743 million dollars on AIDS education (Seidman, 1989). In 1989, an article

in Pennsylvania Medicine, disclosed that the incidence of reported AIDS cases had exceeded 100,000.

It has also been reported that these cases are currently doubling about once every two years (Zeger, See & Diggle, 1989). Two other effects about the incidence of AIDS have also been shown. First, new AIDS cases do not conform to previous stereotypes. Next, several inconsistencies impact upon prediction (Pascal, 1989). Virological and statistical uncertainties and the demographics of its victims all act to confound empirical research.

The Centers for Disease Control has indicated that 2 out of every 1,000 college blood samples tested are infected with HIV, the virus that causes AIDS (Keeling, 1989.) Two disturbing thoughts are connected with this data. First, college campuses are already significantly infected. Next, most of these infections were preventable.

Although there have been a spread of programs to educate students, these attempts have been ambivalent, inadequate and ineffective (Mangan, 1988). Most programs are subject to the censorship of the communities they are trying to enlighten. By 1989, twenty-four states required AIDS education in public schools (FNP Health Report, 1989). The programs now in existence place emphases on abstinence and avoiding intravenous drug use. These programs are doomed to failure.

Sexually active young adults will not abstain from sex and AIDS is a secondary concern for I.V. drug users. Instead of telling participants not to engage in risky behavior, they should be told how to protect themselves when they do (Weisman, et al., 1989). Programs such as this are available, but highly controversial.

Students want to learn more about the AIDS virus (Helgerson & Petersen, 1988). Unfortunately our educational systems are not providing the kind of learning students want. Helgerson and Petersen found that students who had any knowledge about the disease, gathered this information from media sources rather than from educational programs.

How You Get It

In a recent survey, the Field Institute in San Francisco found that the respondents held rampant misconceptions about AIDS' transmission (FNP Health Report, 1989). The impact of these results were, that in an area considered to offer some of the most sophisticated educational programs, most respondents still held stereotypical beliefs about AIDS' transmission. It is not surprising then, that in areas where intimate issues are not addressed, considerable misconceptions surround the prevention and spread of AIDS.

Using a cross-sectional sample, Nader, et al. (1989), surveyed four theoretical constructs about the AIDS virus. The survey addressed the participants' agreement with health guidelines and their perceived norms for safe sexual practices. These students were also asked about their perceptions of personal vulnerability and personal responsibility in the spread and prevention of AIDS.

The Nader study disclosed an interesting paradox. The older, presumably more sexually active students tended to perceive AIDS less as a personal threat. This was supported by their lower ratings for safe sex practices. The lower socioeconomic groups had significantly poorer knowledge about the disease. This group also perceived AIDS

less as a personal threat, were less concerned with the disease and felt that they had little control over its spread or prevention.

Several implications for education were suggested by this study. Nader, et al., pointed to the necessity for designing programs directed toward subculture peer groups. These investigators also felt that students should be educated about the reality of their vulnerability to AIDS. Perhaps most important, students should be taught specific skills to prevent AIDS infection and should be well aware of the parts they play in its transmission.

Who Gets It

Hodgkinson (1985) has predicted major population changes for the future of higher education (Fead, 1989). Today, two major changes are differential birthrates and dramatic increases in the number of children born outside of marriage. According to Hodgkinson, the rise of minority populations will be a powerful motivator prompting educational changes.

Hodgkinson's predictions, however, may not be realistic. While population predictions for higher education abound, most statistics are based on the individuals most susceptible to the AIDS epidemic.

Because of AIDS' association with marginalized groups, most people believe that AIDS is a lethal and transmissible disease only for at-risk groups. Although strong correlations exist between the spread of AIDS, ethnic minorities and intravenous drug users, the disease is by no means limited to these populations (Hopkins, 1987, Schilling, et al., 1989).

Holding onto the belief that these groups are the epidemic's

primary targets grossly underestimates AIDS infiltration in society. AIDS can no longer be perceived as a disease related to homosexuality (Bakeman, Lumb & Smith, 1986; Mann, 1988). Today, most minority males with AIDS are heterosexual.

Sexual Behavior

Manning, Balsom, Barenberg and Moore (1989) found that students' beliefs about practicing safer sex depended upon their knowledge about the AIDS virus. Students who knew little about the disease perceived higher barriers to safe sex.

While most individuals understand the importance of protection, studies have shown that very few people are actually using protective measures to prevent sexually transmitted diseases (Sonnex, et al., 1989; Strader & Beaman, 1989). Negative attitudes toward the use of condoms have indicated the need for influencing normative beliefs to change behavior. These attitudes may be the single most important cause for concern in stopping the spread of AIDS.

These attitudes also support suggestions for redefining and expanding the contributions that teachers can make (Basch, 1989). Specifically, educational programs must be directed toward the proper use of, and the differences between effective and ineffective protection (Weisman, et al., 1989).

Many investigators believe that to be effective, new programs must be developed (Biemiller; 1987, Mangan, 1988). Biemiller suggested that AIDS education should be aimed at changing behavior and should be repeated in different formats. Biemiller also pointed to an unfortunate paradox. The more effective a program is, the more

controversial it tends to be. Effective programs admit there is sexual exploration by young people.

Personal Beliefs

The AIDS epidemic has been accompanied by intensely negative public reactions to persons presumed to be infected with the disease (Herek & Glunt, 1988). Herek and Glunt suggested that the development of an AIDS-related stigma may be an epidemic in itself. Furthermore, accurate knowledge about prevention and transmission of AIDS does not guarantee its application to risky behavior.

Today, most people operate on a continuum of absolute paranoia to omnipotent naivete. In addition, for many who seemingly do understand AIDS' epidemiology, this knowledge is rooted in misconceptions (Manning, Balsom, Barenberg and Moore, 1989)

Personal feelings about compassion, responsibility and exposure are issues not always discussed openly. This effect was supported by Manning, Barenberg, Gallese and Rice (1989) who found that students preferred anonymous forums when being evaluated on their AIDS-related knowledge.

In the current study, an attempt was made to separate the respondents' personal attitudes from their factual knowledge about AIDS. This study was also designed as an anonymous survey in an attempt to retrieve honest and open answers from the respondents.

Theoretical Reasons for Review

In reviewing the literature of the uncertainties surrounding AIDS, several issues remain constant (Anderson, 1987; Taylor, 1989; Wellings,

1987). First, we are in the midst of an epidemic. Next, while not limited to, this disease is primarily directed toward minority populations and young people. Finally, the combination of this epidemic and its threat to the prospective student body will have a considerable effect on the demographics of higher education.

Although some studies have shown that students have a fairly high level of knowledge about the AIDS virus, most students do not consider it an epidemic or a very serious health threat (Sy, et al., 1989). Sy, et al., have suggested that students must be educated in the ways in which they will internalize and maintain risk prevention behaviors.

Educational programs do increase knowledge and positive attitudes. However, they do not appear to have a positive effect on attitudes toward practicing preventive behaviors (Huszti, Clopton & Mason, 1989). It may just be that these programs are not addressing pragmatic issues (Lohrmann, 1988).

Since 1987, Columbia University (Biemiller, 1989) has presented an AIDS conference for people infected with AIDS or HIV. The organization's effectiveness has been shown through the services it offers and the information that it provides. Although intended primarily for an audience outside the university, the group is now seeing a significant part of its own population dealing with the disease.

The success of Colombia's program supports the use of multidisciplinary intervention strategies as suggested by Allensworth and Symons (1989). This practicum would be a first step in designing such a program. As such, the questionnaire's merit would be twofold. First, as a discovery instrument to assess college students' current

conceptions and misconceptions about the AIDS virus. Next, the questionnaire could be used as part of a program for transmitting accurate information about the disease.

Chapter 3

PROCEDURES

The purpose of this practicum was to develop a questionnaire which would examine the students' conceptions and misconceptions about AIDS. For this study, the data presented were pursued through two methods of investigation. The first part of the study was to develop the questionnaire. The next major part of the procedure was to conduct the survey.

Population and Selection Procedures

The questionnaire was presented to students enrolled in two Psychology 101 courses at Essex Community College in Maryland. Although these classes consisted of a total population of 72 students, only 57 participated in the survey. The difference between the actual population and the final sample was the result of three effects.

First, the students were told that the decision to participate in the survey was a voluntary one. The students were also told that this decision would have no impact upon their final grades. When given a choice, some students elected not to complete the questionnaire.

Next, if a student used more than one answer to a question, then that answer was omitted from the data. The results of this intervention are reflected in the differences between the amounts of answers to each question and the calculations based upon this total. The instructions on the questionnaires included the statement: "Please answer true or false to each of the following questions." As such,

more than one answer to any question was considered unacceptable.

Finally, because of drop-outs and absentees, not all students participated in all surveys. This disparity imposed additional limitations on the sample size.

Data Collection

The participants were asked to complete the questionnaires in class at the beginning and during the regularly sched_led semester. Overall, the classes were exposed to three administrations of two questionnaires.

1. Class A = Questionnaire 1, Class B = Questionnaire 2
2. Class A = Questionnaire 2, Class B = Questionnaire 1
3. Class A = Questionnaire 1, Class B = Questionnaire 2

For the first administration, each class was given a different version of the questionnaire. Two weeks after the first administration, each class was asked to complete the questionnaire to which it had not been previously exposed. The participants were then exposed to their original questionnaire a second time.

Development and Administration of Questionnaire

A questionnaire entitled "What I Know About the AIDS Virus" (Appendix A), was developed to examine several issues about the spread and prevention of the this disease. This questionnaire was presented to the students as an inquiry about their knowledge about AIDS, and was completed in class.

Salient questions presented by other sources were used to develop the questionnaire. Some resources for the questions were the Field

Institute, The National AIDS Awareness Test, the Federal Centers for Disease Control and the Surgeon General of the United States. The questionnaire was presented to the students as a paper-and-pencil measure in a true-or-false format. The questionnaire was also administered as an anonymous survey.

The questions for consideration were divided into two tests containing the same number of items, type of content and level of difficulty. Because of the many conflicting propositions surrounding the AIDS virus, this division was an attempt to cover most of the issues in a manageable form.

Within each test, the questions were separated to address the etiology and epidemiology of the disease. Several questions about the personal attitudes and experiences of the respondents were also included in the survey.

Reliability and Validity

Reliability of the questionnaire was established through correlation coefficients between the test-retest measures and through the use of alternate forms of the test (Anastasi, 1982). These comparisons measured both temporal stability and consistency of response to the same and different samples.

Content sampling was an attempt to control for factors specific to the particular selection of items and for fortuitous factors in the students' experiences. Administering the questionnaire at different intervals was an attempt to evaluate fluctuations over time. Internal consistency was evaluated through correlations between the subtests and the totals scores (Anastasi, 1982).

Consistency of the Questionnaires

Chi-Square comparisons as a function of survey administration were:

1. Alternate Forms: $\underline{X}^2$ (1,110) = 8.85, $\underline{p}$ <.01, (First to Second Administrations)
2. Test-Retest: $\underline{X}^2$ (1,100) = 9.63, $\underline{p}$ <.01, (First to Third Administrations)
3. Overall: $\underline{X}^2$ (2,153) = 11.66, $\underline{p}$ <.05. (Between Three Administrations)

The strength of these relationship indicated that the questionnaires were sufficiently reliable.

Content of the Questionnaires

When the questionnaires were separated as to question content, Chi-Square comparisons between the subsections were:

1. The Epidemic: $\underline{X}^2$ (1,110) = 1.86, n.s
2. How You Get It: $\underline{X}^2$ (1,110) = 8.27, $\underline{p}$ <.05.
3. Who Gets It: $\underline{X}2$(1,110) = 4.66, $\underline{p}$ <.05.
4. Sexual Behavior: $\underline{X}^2$ (1,110) = 5.37, $\underline{p}$ <.05.

The correlation between the two questionnaires was also statistically significant, $\underline{X}^2$ (1,110) = 18.72, $\underline{p}$ <.01. All correlations were based on the number of incorrect responses to each question on each of the surveys. Face validity was established through the resources used for the content of the surveys and was supported by the strength of these results.

Because the fifth sections of the surveys required an opinion rather than a correct answer, they were not included in the above distributions. Based upon the students' initial exposures to both questionnaires, the following differences were disclosed.

Table 1

The Personal Beliefs of the Students

Question	% True	% False
Questionnaire 1		
Pay Own Medical Costs	32	68
Compulsory Testing	70	30
Government Being Honest	72	27
Comfortable Talking About Sex	95	4
Uncomfortable Around AIDS' Patient	61	37
Questionnaire 2		
Would Not Want To Be Near AIDS Center	36	68
Physicians Should Be Required To Treat	55	43
Educational System Effective	51	43
Partner-Choice Responsibility	77	11
Know Someone With AIDS or HIV	19	80

Percentage differences were based upon the fifty-seven students who answered the first questionnaire and the fifty-three who answered the second questionnaire. When a student did not answer a question or used more than one answer to a question, it was not included in the data. The discrepancies that exist between some of the percentages reflect this decision.

The intent of Table 1 was a descriptive analysis of the students' opinions rather than a statistical one. A narrative description of these results may be found in the interpretive section of this report.

Operational Definitions and Data Interpretation

Because the students' answers were collected anonymously, they were presumed to be an honest assessment of their current knowledge about the AIDS virus. For this study, misconceptions about the disease were operationally defined as incorrect answers to the questions. Correct answers, therefore, were perceived to be the accurate information held by the students. Research evaluation for this sample was presented through comparisons between the students misconceptions and accurate information about the disease.

Statistical Analyses

Research evaluation for this sample was examined through two between-groups Analyses of Variance. First, the individual and interactive effects of survey form (Test 1, Test 2) and administration (first, second) were examined. The dependent variable was the number of incorrect responses collected from the sample.

Next, the data were subdivided by the each subsection presented on the questionnaire and compared to the first and second forms of the questionnaire. The dependent variable was the number of incorrect responses provided by the students.

Research Questions

In this study, the question for consideration was: what do college students know about AIDS? The intent of this study was to design and implement a questionnaire to answer this question, and to make inferences from the data collected.

Assumptions and Limitations

Any predictions based upon the current study must be limited to the participating sample, daytime students surveyed at Essex Community College in Maryland. As a result, this sample may not accurately represent the conceptions of students attending other colleges or attending college at nontraditional times.

Furthermore, while the students may have been willing to respond to the questionnaires, no assurances can be given that their answers were other than good or bad guesses. Although temporal and content interventions were attempted, experience and fortuitous factors should be considered.

Overall, the answers to the surveys were as diversified as the students who were surveyed. Very few participants did particularly poorly or particularly well on the questionnaires.

The intent of this study was to provide some insight into students' conceptions and misconceptions about the AIDS virus. However, because of the restrictive nature of the data being examined, its reliability and validity will always be questionable.

The literature has shown that the inconsistencies surrounding the AIDS virus defy mathematical models and have confounded empirical research. At best, predictions and generalizations about the disease are only theoretical models.

Chapter 4

RESULTS

Statement of Results

In this study, although the students were endowed with a considerable amount of accurate information about the AIDS virus, they were also considerably misinformed. A presentation of the results of this study is displayed through descriptive tables and narrative form. These distributions were based upon the students' incorrect answers to the questions.

Descriptive Tables and Analyses of the Data

Table 2

Analysis of Variance of Response Rate as a Function of Questionnaire Administration

Source	SS	df	MS	F
Questionnaire	1	1	1.00	1.49
Administration	8	1	8.00	11.94**
Quest. x Adm.	10	1	10.00	14.92**
Error	213	316	.67	

* $p < .05$
** $p < .01$

Examination of Table 2 indicates that the time of administration had a significant effect on test performance.

Table 3

Mean Distributions of Response Rates as a Function of Questionnaire Administration

Source	Test 1	Test 2	Total
First Administration	1.51	1.10	(1.30)
Second Administration	1.44	1.74	(1.62)
Total	(1.49)	(1.40)	
Grand Mean			(1.44)

Examination of Table 3 indicates that although there were no differences as a function of test form, time of administration had a significant effect on performance. For this sample, the students were more successful the first time that the survey was administered.

Table 4

Analysis of Variance of the Concepts on the Surveys as a Function of Questionnaire Form

Source	SS	df	MS	F
Questionnaire	6	1	6.00	12.76**
Content	8	3	2.67	5.68**
Questionnaire x Content	5	3	1.67	3.55*
Error	131	275	.47	

* $p < .05$
** $p < .01$

Inspection of Table 4 indicates that both the form of the questionnaires and the concepts contained within them had a significant effect on performance.

Table 5

Mean Distributions of Incorrect Response Rates as a Function of the Form of the Questionnaires and the Concepts on the Surveys

Source	Test 1	Test 2	Total
The Epidemic	1.30	1.32	(1.31)
How You Get It	1.38	.53	(1.67)
Who Gets It	1.37	.48	(1.56)
Sexual Behavior	1.73	1.80	(1.83)
Total	(1.47)	(1.80)	
Grand Mean			(1.63)

Comparisons between the questionnaires indicate that the students knew more of the information on Tests 1 than they did on Test 2. They also knew more about the etiology of AIDS than its epidemiology.

Chapter 5

DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

The purpose of this study was to develop a questionnaire that would stimulate in-class discussion in its final form. Although several questions were discarded on the final form of the survey, this should not preclude their use in other settings. The final form of the questionnaire was based upon this samples' erroneous beliefs.

However, neither the original questionnaires nor the final form should be interpreted as being all things to all people. The impact of this epidemic is such that the misconceptions of one student could have disastrous consequences on anyone with whom he or she has an intimate relationship. Therefore, new issues arising as a result of classroom discussions may be of greater importance than the concepts considered here.

Interpretation of the Data

The results of this study indicated that, for the participants sampled, more misconceptions were held about how one gets AIDS than about its impact on society. Although the conceptions of some of the students were accurate, this should not negate the impact of their considerable misconceptions about AIDS. Furthermore, no question on either survey was answered correctly by all of the students.

When separated, the five domains surveyed by the questionnaires provided some interesting replies. After each group had been exposed to both surveys, their replies were remarkably similar about most of the concepts contained in the questionnaires.

The Epidemic

Questionnaire 1, 10% and Questionnaire 2, 13% incorrect. The questions in this subsection requested information about the physiological manifestations of AIDS. The students were particularly naive about the number of people infected, the ability to discern this infection and the costs incurred as a result of infection.

How You Get It

Questionnaire 1, 16% and Questionnaire 2, 21% incorrect. The students also held many misconceptions about the etiology of the AIDS virus. Their beliefs included parasitic as well as bacteriological causes for the disease.

The students also indicated that AIDS is more contagious than both measles and the common cold. Although AIDS is highly contagious through risky sexual behavior and the blood of infected patients, it is not more contagious than either measles or the common cold.

Who Gets It

Questionnaire 1, 22% and Questionnaire 2, 27% incorrect. The questions about the epidemiology of the disease disclosed several inconsistent answers by the students. They believed that the spread of AIDS was specifically related to homosexuals and ethnic populations. The students also believed that people who gave blood or got blood could get AIDS. While people who get blood may be susceptible to the disease, it has no impact upon people who give blood.

Most of the students believed that hospitals were required to protect their employees against infection and that cases of infection have been linked to mosquito bites. Both of these concepts are false.

At present, there are no hard and fast rules for the protection of health care workers. The AIDS virus is not transmitted through a mosquito's salivary glands like other diseases such as malaria or yellow fever.

Sexual Behavior

Questionnaire 1, 31% and Questionnaire 2, 30% incorrect. The largest number of incorrect answers fell within this subsection on both forms of the surveys. Over fifty percent of the student believed that they could get AIDS more easily through vaginal than anal sex.

The students knew little about the differences in protective measures for the prevention of AIDS. They also ignored the consequences of their partner's past experiences even though they believed that they could get AIDS through a kiss.

Personal Beliefs

On a personal level, this sample's compassion for others and responsibly for themselves left a lot to be desired. They adamantly believed that infected patients should pay their own costs for treatment. They also indicated that they would feel very uncomfortable around someone who had AIDS. Although eighty-five percent of the students felt comfortable discussing sex with their partners, one-third of them had no interest in their partners' past sexual experiences.

The majority of the respondents believed that our government has not been completely honest about the AIDS virus, and that our educational system has not been effective in presenting AIDS-related information. Over seventy percent of the respondents believed in compulsory AIDS testing, yet only a fraction of this group indicated

that their blood had been sampled. Twenty-four percent of the respondents knew someone who had AIDS or HIV, the virus that causes it.

Research Implications

The identification of students' misconceptions about AIDS should be of concern to all institutions. The results of this study indicated that many students held erroneous beliefs about the spread and prevention of AIDS.

The students demonstrated little responsibility for the parts they might play in the spread of AIDS by their failure to be tested for the disease. This lack of testing would also support their omnipotent attitudes toward the possibilities of infection.

Because AIDS is primarily a problem among young people, higher education is particularly vulnerable to its effects. Keeling (1989) suggested that higher education had the opportunity to protect and preserve the health of its students. As such, teachers have a responsibility to educate themselves and their students about the AIDS virus (Fetter, 1989).

However, although individuals are equipped with accurate information, knowing the difference between right and wrong is no guarantee that their behavior will change. As suggested by Biemiller and Mangan, this information should be reinforced through repetition and through new formats.

Recommendations for Further Investigation

If, as disclosed by the statistical differences in this study, college students know shamefully little about AIDS, then two other

questions must be considered. Why do these students know so little, and how can higher education help get this information to them?

In this study, the laissez faire attitudes and misconceptions about AIDS would suggest that current educational formats are not working. Further research should be encouraged through the administration of the questionnaire in situations other than college settings. Other formats to provide information about the disease should also be developed.

For example, in its final form, the questionnaire could implement the suggestions of other investigators. Supplying the correct answers to all the questions in class could encourage open and frank discussions. The learning outcomes of this type of intervention could be evaluated through test-retest measures.

Based upon the students' replies, a final form of the survey was composed (see Appendix A). The questions used to develop this instrument were the ones with the lowest numbers of correct responses. These questions were selected for two obvious reasons. If most of the students knew the answers to a question than obviously few misconceptions surrounded that issue. If most of the students did not know the answer to a question, then obviously its discussion was worth pursuing.

This form of data collection was an attempt to present a manageable instrument through which discussion would be encouraged. Therefore, omitting certain questions was an attempt at parsimony and was not intended to censor their use in any interactive discussions. It is the intention of this investigator to implement the new survey as part of a test, intervention, retest study at a later date.

Potential Impact

We are currently facing an epidemic of major proportions, and its influences on higher education cannot be denied. While population predictions are being made for future numbers of college age individuals, no assumptions can be made that they will attend college.

Although many reasons exist for not going to college, for those infected AIDS, attaining this goal may be an impossibility. The future of higher education faces a major challenge. Those individuals upon which its predictions are based are the ones most susceptible to the AIDS epidemic. As such, it is the responsibility of all systems to educate for prevention and protection.

If, as the literature suggests, the incidence of AIDS is stronger among minority populations, then their offspring will suffer its consequences. Yet, the literature also predicts a majority of minorities in the next generation of higher education. The inconsistencies here should be of major concern to all educators.

Many implications for the future of higher education may be suggested through this investigation. If enrollment trends will change, then higher education must be prepared to deal with the nature and effects of these changes. If current predictions about the exponential growth rate of AIDS are accurate, then the nature of these changes may be more insidious than their effects. With the emergence of a new influence on higher education, new issues must be considered.

First, educators will be interacting with considerably more people incubating or infected with the disease. Next, current assumptions about the reasons for attendance may warrant review. It would be

highly unlikely that an individual suffering from a terminal illness would be attending college for the same reasons as a student with a bright future. Finally, accurate education about AIDS must be included in all college curricula, whether or not this information is deemed controversial.

AIDS research has largely ignored peripheral participants and prospective patients. The domains surveyed in the practicum were an attempt to consider these new issues. This study was an attempt to investigate and consolidate students' current knowledge about the AIDS virus, the implications of discordant predictions, and the responsibility of higher education to its students.

The basic tenet of higher education is preparation for the future. Even when controversial, these systems cannot afford to abdicate their responsibility to present accurate information. Lack of information about the AIDS epidemic threatens the students who move through these institutions and, as such, the institutions through which they move.

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APPENDIX A

SAMPLES OF THE QUESTIONNAIRES

QUESTIONNAIRE 1

WHAT I KNOW ABOUT THE AIDS VIRUS

Please Answer True or False to Each of the Following Questions

The Epidemic

1. The number of AIDS virus carriers in the United States is available. T F
2. The symptoms of people with AIDS are always the same. T F
3. Once you have the AIDS virus, you will always have it. T F
4. There is no known vaccine to protect against AIDS. T F
5. If your blood tests negative, you are immune to AIDS. T F

How You Get It

6. AIDS is caused by a parasite. T F
7. AIDS is more contagious than the common cold. T F
8. You can get AIDS from a tattoo needle. T F
9. You can get AIDS from toilet seats. T F
10. The AIDS virus thrives in heroin. T F

Who Gets It

11. A pregnant woman with AIDS can give birth to an infected child. T F
12. AIDS cannot be transmitted from female to male. T F
13. Hospitals are required to protect health care workers against infection from the AIDS virus. T F
14. You can get AIDS from touching an AIDS carrier. T F
15. People who get blood can get AIDS. T F

Sexual Behavior

16. You can get AIDS more easily through anal sex than vaginal sex. T F

17. Early withdrawal during sex is a one way to prevent AIDS. T F

18. A natural condom is the best device to use for protection. T F

19. You can get AIDS through sex even though you are only having sex with one partner. T F

20. You can get AIDS from kissing. T F

My Personal Beliefs

21. People who have AIDS should pay their own medical costs. T F

22. I favor of compulsory AIDS testing for everyone in the United States. T F

23. I do not believe that the government has been completely honest about issues surrounding AIDS. T F

24. When I know someone well enough, I feel comfortable talking about sex. T F

25. I would feel very uncomfortable about being around someone who has AIDS. T F

26. I have been _____ have not been _____tested for AIDS.

QUESTIONNAIRE 2

WHAT I KNOW ABOUT THE AIDS VIRUS

Please Answer True or False to Each of the Following Questions

The Epidemic

1.	Women have a greater natural immunity to AIDS.	T	F
2.	A person who has AIDS can look well and feel healthy.	T	F
3.	It can take five years or more for an AIDS virus carrier to develop the disease.	T	F
4.	There is no known cure for AIDS.	T	F
5.	Average costs for an AIDS patient exceed $50,000 a year.	T	F

How You Get It

6.	AIDS is caused by bacteria.	T	F
7.	AIDS is more contagious than measles.	T	F
8.	You can get AIDS from a sneeze.	T	F
9.	You can get AIDS from a swimming pool.	T	F
10.	You can get AIDS from food-handlers.	T	F

Who Gets It

11.	Most homosexuals have AIDS.	T	F
12.	Among ethnic groups, Blacks and Hispanics are more susceptible to AIDS.	T	F
13.	Doctors have found people who have been infected with AIDS by mosquito bites.	T	F
14.	Health workers can get the AIDS virus if infected blood gets into cuts under their skin.	T	F
15.	People who give blood can get AIDS.	T	F

Sexual Behavior

16. You can get AIDS more easily through vaginal sex than oral sex. T F

17. Sex with protection is a sure way to prevent getting AIDS. T F

18. A latex condom is the best device to use for protection. T F

19. Spermicidal gel used with a condom adds protection against AIDS. T F

20. A recent negative blood test is proof that a person is not an AIDS carrier. T F

My Personal Beliefs

21. An AIDS center in my neighborhood would upset me. T F

22. Doctors and dentists should be required to treat AIDS patients. T F

23. I believe that our educational system has been effective in presenting AIDS-related information. T F

24. It is my responsibility to find out about my partner's past sexual experiences. T F

25. I know someone with AIDS or HIV, the virus that causes it. T F

26. I have been _____ have not been _____tested for AIDS.

WHAT I KNOW ABOUT THE AIDS VIRUS

(Final Form)

Please Answer True or False to Each of the Following Questions

YOUR SEX_____ YOUR AGE_____

The Epidemic

1.	The number of AIDS carriers in the U.S. is available.	T	F
2.	The symptoms of people with AIDS are always the same.	T	F
3.	Women have a greater natural immunity to AIDS.	T	F
4.	A person who has AIDS can look well and feel healthy.	T	F
5.	Average costs for an AIDS patient exceed $50,000 a year.	T	F
6.	It can take five years or more for an AIDS virus carrier to develop the disease.	T	F
7.	I do not believe that the government has been completely honest about issues surrounding AIDS.	T	F

How You Get It

8.	AIDS is caused by a parasite.	T	F
9.	AIDS is more contagious than the common cold.	T	F
10.	You can get AIDS from a tattoo needle.	T	F
11.	The AIDS virus thrives in heroin.	T	F
12	AIDS is caused by bacteria.	T	F
13.	AIDS is more contagious than measles.	T	F
14.	It is my responsibility to find out about my partner's past sexual experiences.	T	F

Who Gets It

15. Hospitals are required to protect health care workers. T F

16. People who get blood can get AIDS. T F

17. Most homosexuals have AIDS. T F

18. Blacks and Hispanics are more susceptible to AIDS. T F

19. People have been infected with AIDS by mosquito bites. T F

20. People who give blood can get AIDS. T F

21. A recent negative blood test is proof that a person is not an AIDS carrier. T F

Sexual Behavior

22. You can get AIDS more easily through anal sex than vaginal sex. T F

23. A natural condom is the best device to use for protection. T F

24. You can get AIDS through sex even though you are only having sex with one partner. T F

25. You can get AIDS from kissing. T F

26. Sex with protection is a sure way to prevent getting AIDS. T F

27. A latex condom is the best device to use for protection. T F

28. Spermicidal gel used with a condom adds protection against AIDS. T F

My Personal Beliefs

29. People who have AIDS should pay their own medical costs. T F

30. I favor of compulsory AIDS testing for everyone in the United States. T F

31. I would feel very uncomfortable about being around someone who has AIDS. T F

32. An AIDS center in my neighborhood would upset me. T F

33. Doctors and dentists should be required to treat AIDS patients. T F

34. When I know someone well enough I feel comfortable talking about sex. T F

35. I know someone with AIDS or HIV, the virus that causes it. T F

36. I have NOT BEEN tested for AIDS. T F

37. Most of the information that I have about AIDS has come from
    A. My Parents
    B. My Friends
    C. School
    D. Television, Radio or Newspapers

38. I was _____ was not_____ present in class for the lecture on AIDS.